UNDER-PRESCRIPTION/ OVER-PRESCRIPTION: NARCOTIC AS METAPHOR*

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To state that our society is drug oriented and that physicians, in their attempts to improve health and function, actively prescribe drugs is to belabor the obvious. National estimates of drug use recorded more than 1.42 billion prescriptions in 1981, with new prescriptions accounting for 52% of this total.[1] Statistics from the pharmaceutical industry suggest that since 1960 the actual prescription size has also increased steadily, the average 1981 prescription containing 27% more units than those issued a decade earlier. In an average physician-patient encounter, it has been estimated that four drugs are prescribed per person per year. Although this admittedly accounts neither for individual patient variability nor for purchase of over-the-counter medications, nevertheless, by any measure consumption of drugs plays a major role in modern medicine.

Despite reliance of both physicians and patients upon pharmaceutical agents, compelling evidence suggests that, indeed, one group of drugs has been consistently underprescribed, often resulting in unnecessary pain and suffering by those in most need of this medication. This group consists of the synthetic, semisynthetic and natural opiates and opiate antagonists, referred to in common parlance as narcotics. In this paper the following hypotheses will be developed: Physicians consistently underprescribe narcotics, resulting in needless pain and anxiety; the reasons for this underprescription are far from rational and are not solely related to a lack of knowledge; and education as to appropriate prescribing practices will be less than successful in correcting this problem unless the reasons underlying the inappropriate behavior are addressed.

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*Presented as part of the *Conference on Developing Guidelines for the Use of Sedatives and Analgesics in the Hospital*, sponsored by the Working Group on Prescription Drugs of the Subcommittee on Alcoholism and Drug Abuse of the Committee on Public Health of the New York Academy of Medicine, held at the Academy October 26, 1984.

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In short, it will be demonstrated that physicians' use of analgesic medications are based on the metaphorical rather than the scientific, resulting in what Morgan has called an "opiophobia," deterring physicians from appropriately prescribing narcotic drugs.[2]

Underutilization Of Narcotics

Prior to addressing physicians' prescriptions of narcotics, it is important to demonstrate that their prescribing patterns are specifically related to the narcotic properties of these drugs rather than a general reluctance of physicians to prescribe any mood-altering medications. Data concerning physician prescription of other mood-altering drugs suggest that these agents are, in fact, prescribed with considerable enthusiasm. Evidence from several data bases recording drug use in ambulatory settings indicates that prescriptions for diazepam, phenobarbital, promethazine, and amitriptyline accounted for more than 86 million prescriptions in 1981. Diazepam (as Valium) appeared to be the drug most commonly prescribed by physicians.[1] Ray et al., in a review of more than 300,000 prescriptions in more than 5,000 patients in 173 nursing homes, found 43% of patients getting antipsychotic drugs.[3] A review of antidepressant use in an alcoholic population noted that 27% received antidepressant therapy, while only 7% had a confirmed depressive illness.[4] In a study of women admitted to a metropolitan correction center, 58% had prescriptions for psychotropic agents although only 23% were judged drug dependent or in need of these medications.[5] Although the elderly are particularly vulnerable to sedative and hypnotic use, a survey by Cooper found that 39% of all hypnotics were prescribed for people over 60 years of age, with almost 50% of the barbiturates prescribed directly for this age group.[6] Salzman and Van Der Kolk, in a study of prescription drug records in a medical and surgical teaching hospital, found that hypnotic agents had been given to one out of every four patients.[7] Data also suggest that internists and family practitioners tend to prescribe these drugs disproportionately to the frequency of patient-office visits.[8] In many instances, such prescriptions are given without a specific diagnosis and in a manner inconsistent with their appropriate use.[6,9,10,11]

The dangers of frequent prescription of psychotropic medications have been emphasized by Stern et al., who, in a review of 255 patients admitted to the hospital with life-threatening overdose due to prescription and nonprescription medication, found that 75% had received psychiatric treatment, 57% were currently in treatment at the time of the overdose and 54% had been seen

by a physician or therapist shortly before their admission. Tricyclic antidepressants were responsible for 35% and benzodiazepines and/or barbiturates for 45% of all overdoses.[12] These data suggest that physician prescription of mood-altering drugs, other than narcotics, is far from minimal.

In attempting to document underutilization of narcotic analgesics, it is necessary first to make certain that the physician is aware that the prescribed drug is a narcotic and, second, to focus on individuals recognized as having organic-based pain. The importance of assuring physician realization of a drug's narcotic properties is far from academic. Until recently, most physicians considered propoxyphene a nonaddictive, non-narcotic agent, with the result that propoxyphene was the third most frequently prescribed medication in 1978.[13] Indeed, propoxyphene, an analog of methadone, can in sufficient dosage produce dependence, tolerance, addiction, and overdose. Fortunately, increasing documentation by the Food and Drug Administration of the dangers of propoxyphene overdose, as well as its liability to produce dependence, has resulted in greater physician awareness.[14] Yet, even today, as many as 25% to 30% of physicians still do not consider this drug a narcotic and are unaware of its relationship to methadone.

Similarly, pentazocine, available as an analgesic since 1967, was initially described as non-narcotic, with a low risk of dependence. Unfortunately, many cases of pentazocine addiction have been reported and, with respect to illicit use, pentazocine in some areas has become an attractive alternative to heroin.[15,16] Physicians' unawareness of pentazocine's dependency-producing potential is why their prescriptions are the major source of its inappropriate use.

Even a mild narcotic, such as codeine, is often considered nondependency producing by both physicians and patients. Codeine, usually in combination with aspirin or acetaminophen, is one of the most frequently prescribed analgesics, and correspondingly is the most frequent drug of abuse in patients without demonstrable causes of pain. As noted by Muruta et al., in many instances people taking these drugs were actually unaware that they were ingesting a narcotic.[17]

When one focuses on those patients with documented pain requiring moderate or potent analgesics, evidence suggests that physician prescribing patterns and subsequent pain relief for patients are far from optimal.[18,19] This is most apparent in cancer pain where unnecessary pain and significant suffering persist because of physician hesitancy to prescribe appropriate analgesics in as many as three quarters of such patients.[20,21] Morgan and Pleet, in a

review of 100 patients with malignant pain, noted that 60% were given 50 mg of meperidine or less for pain, 11% of these patients at a dosage interval greater than five hours and all prescriptions written for PRN medication in the acute-pain state.[22] Although it has been amply documented that PRN medication in acute pain is contraindicated, physicians almost uniformly prescribe narcotics in this manner, believing that such prescription will not only result in better control of narcotic dosage but, in addition, decrease the likelihood of developing addiction. These feelings are so intense that when physicians are asked if their patients are obtaining pain relief, only 50% can even correctly estimate the pain level existing in their patients.[23]

Reasons For Inappropriate Physician Utilization Of Narcotic Agents

Lack of suitable knowledge base. There is no question that physician knowledge of the pharmacology of narcotic agents is far from what it should be. Marks and Sachar,[20] Charap,[21] and Morgan and Pleet[22] have all amply demonstrated physicians' unawareness of appropriate doses, duration of actions and the need to distinguish between acute and chronic pain. The deleterious effects of persistent acute pain, amply documented by Bonica, have not been appropriately emphasized or even taught in most medical schools or residency programs.[18] This lack of awareness has been unrelated either to level of training or to specialty, including the field of oncology.[24]

Physicians also consistently confuse the terms dependence and addiction. Dependence, a physiological (and/or psychological) state necessitating the continued use of a drug to avoid signs of withdrawal, is used interchangeable with addiction, a sociologic, pejorative term indicating the presence of compulsive drug-seeking behavior that often occupies an individual's total energy. Dependence is common in modern medicine. Addiction is not. Only with narcotic use does physician confusion between dependence and addiction occur. Yet, knowledge in and of itself is insufficient to assure appropriate prescribing patterns, for even when physicians are knowledgeable, they frequently refuse to integrate this knowledge into their clinical practice. Reasons for this are complex but can be summarized in three words—fear of addiction.

Narcotic as metaphor. Whenever a physician is asked why an inadequate dose of a narcotic analgesic is prescribed, the reason most frequently given is fear of initiating narcotic addiction. The extent to which this fear prevails can be seen when this explanation is offered even if the patient is already

dependent upon a narcotic drug. In such circumstances, narcotics continue to be prescribed in the same dosages as to nondependent persons.

The data, however, documenting the development of addiction with appropriate prescription of narcotic agents are not only far from convincing but, in fact, suggest the opposite. Chambers and Moffett, reviewing addiction in a population of heroin addicts, noted that only 2% of clients attributed their addiction to prescriptions of a narcotic for medical reasons.[25] Chambers and Ball, in a survey of all admissions to the United States Public Health Hospital in Lexington, Kentucky, in 1965, found that fewer than 10% of addicts attributed the onset of their addiction to medical problems.[26] Senay, in reviewing more recent data from the Illinois Drug Abuse Center, found that only three out of 1,900 people admitted to that facility became addicted due to previous medical treatment.[20] Perhaps the most recent data concerning iatrogenic narcotic dependence in a nonaddicted population have been that of Porter and Jick, published as part of the Boston Collaborative Drug Survey.[27] In a survey of 11,882 hospitalized patients receiving narcotics during their stay, only four (0.03%) were reported to have become addicted during their hospitalization, and only one was considered to have a major problem. Nonetheless, narcotic agents continue to be underprescribed.

It is suggested that the reason for this persistent misconception relates to the metaphorical use of narcotic, elevating its status to that of a magical force and, therefore, something to be feared. Indeed, as noted by Morgan, it is entirely possible that many physicians suffer from opiophobia.[2] A phobia, as defined by the DMS III criteria, is manifested by the persistent and irrational fear of and compelling desire to avoid (the use of narcotics) due to the feeling that the result will in some way either expose (the physician) to public scrutiny or demonstrate severe untoward effects (upon the patient).[28] Opiophobia, like other simple phobias, is most often accompanied by the well known defense mechanism of denial (''there is no real pain'') and rationalization (''this is really best for the patient''). It must be emphasized that physicians are not alone in this behavior. Society as a whole has also adopted a metaphorical view of narcotics, which often results in a patient's hesitancy even to take the drug when prescribed appropriately, as well as a fear by the prescribing physician of community disapproval and sanction.

Effects on physician prescribing behavior. Temin, in a review of physician prescribing behavior, defined three basic behavioral modes: instrumental, command and customary.[29] The instrumental mode allows for critical analysis of drugs to be used or therapies to be performed, with subsequent choice of the most appropriate therapy. The command mode results in an

individual acting as he perceives that one must act due to fear of penalties for noncompliance. The customary mode is activated when the physician acts in a manner felt to be appropriate by the community at large or by his peer group. Temin suggests that prescription of all drugs follows the customary mode, influenced by tradition rather than knowledge. Ample evidence exists to suggest that this is true, with therapeutic advantage being an important but not an overwhelming determinant for choosing a drug. Indeed, as described by Temin in a study of drug usage, the majority of uses for each drug studied conflicted with the indication given in the *Physician's Desk Reference*.[30]

Epstein et al. also noted that knowledge of drug efficacy, side effects and costs could not exist as independent variables in prescribing practices. Attitudes, however, were correlated.[31] With respect to prescription of narcotics, it is suggested that both the customary and command modes are operative. The sanctions feared most often are self-imposed by potential guilt on the part of the physician should a patient receiving a narcotic agent become addicted.

The effects of inappropriate prescription of narcotics by physicians are considerable. First,,and perhaps most important, needless pain is suffered by patients in both acute and chronic settings. As noted by Marks and Sachar, up to 73% of patients surveyed remained in pain despite parenteral medication.[20] Second, and perhaps equally important, due to the lack of pain relief, the physician-patient relationship begins to crumble and becomes adversary. As described by Hammond, patient and physician "become enmeshed in a silent battle for control."[32] The effects of this were demonstrated by Marks and Sachar, who found that when asked to see patients referred for psychiatric evaluation due to their "over emotional" responses to pain, "in virtually every case...the patient was not being adequately treated with analgesics and, further, the house staff for various reasons was hesitant to prescribe more."[20]

Because patients in pain are often quite vocal about their distress and physicians must in some way attempt to provide relief, the third adverse effect of this opiophobia is iatrogenic dependence on another mood-altering drug. This occurs when physicians prescribe a benzodiazepine or a barbiturate to a person in pain receiving inadequate narcotics. Now, not only does the patient have a dependence on narcotics, but, in addition, develops one to the barbiturate/hypnotic, sedative/tranquilizer group as well. These latter drugs are usually prescribed on a round-the-clock basis.

Finally, this opiophobia begins to cloud physician thinking to the extent

that it appears in social discourse, as well as in sociopolitical settings. Recently, a bill, the Compassionate Pain Relief Act (HR 5290), was introduced in Congress to permit the use of heroin in cancer patients whose pain was unrelieved by other analgesics. This controversy, however, is, as stated in a recent *Lancet* editorial, "a great nonissue of the day."[33] The bill caused considerable controversy. HR 5290 was subsequently defeated after much emotional testimony by both critics and advocates. Without taking a stand on the appropriateness or need for this legislation, the most compelling arguments leading to its failure to pass were the potential for diversion, robbery of hospital pharmacies, and development of dependence upon or addiction to heroin. These views were offered, although use of heroin would be restricted to the terminally ill. An apparent, and often neglected, point in this controversy was the observation that were physicians to use available narcotics appropriately, the need for heroin would become moot.[34,35,36]

Resolving The Problem

Although one cannot logically argue about the value of education, and Bonica is undoubtedly correct in emphasizing the need to teach students, house staff, and physicians, this approach by itself may be of limited value. There is sufficient information concerning the pharmacology and use of narcotic agents in pharmacology texts read by all students. Almost all medical schools include this subject in their curricula, and most institutions have ongoing conferences on the appropriate management of pain. Articles regularly appear in medical journals on pain management, and divisions of clinical pharmacology are becoming prominent in medical schools. Despite these activities and, indeed, in the presence of attending physicians with appropriate information available on the use of narcotics in pain control, these medications continue to be prescribed inadequately. Each survey concerning physician knowledge of these drugs has found physicians wanting in either retaining this knowledge or translating it into clinical settings.

Since it is suggested that physician prescribing habits of narcotics are not entirely rational, greater emphasis on this subject in medical school or in textbooks or journals will not satisfactorily address this problem. Nor will continuing education seminars on pain management for practicing physicians. These sessions are usually poorly attended and quickly forgotten because most physicians do not recognize pain control as a problem. Similarly, the development of specialized pain centers, while perhaps helpful to patients, will only further isolate practicing physicians from appropriate pain manage-

ment. What is needed is an educational approach directed at the group most likely to influence both students and private physicians—the house staff. Only by focusing on house staff through working rounds or small group seminars can the message concerning adequate control of pain and the difference between dependence and addiction be realized. This is not an easy effort, and requires at the minimum a nucleus of knowledgeable physicians at each hospital. However, if house staff on a case-by-case basis can be educated, then the customary mode of prescribing may change and the command mode may be eliminated. Residents not only will reenforce this behavior with students but, in turn, will influence attending physicians through the care they provide to their patients.

Conclusions

In summary, it is suggested that physicians underutilize narcotic drugs in the management of pain and that, as a result of this practice, many patients undergo needless pain and suffering. Equally important, failure to use these drugs appropriately undermines the physician-patient relationship. Reasons for this are related not only to misinformation concerning drug action but to the instilling of a mystical and dark force into narcotic agents, causing these drugs to be viewed in a manner dissimilar to other pharmaceuticals. Only by overcoming this view through demystification of addiction and dependency can this issue ultimately be addressed. Narcotics, used appropriately, are extremely effective therapeutic tools and, indeed, can help an individual incapacitated by pain to become functional. To do any less would be inconsistent with the goals and objectives of medical care.

Questions and Answers

Question: I feel that heroin is substantively better than morphine. Would you comment on this please?

Dr. Stimmel: British data tend to suggest that with the exception of the more rapid passage of heroin through the blood brain barrier, heroin has no advantage over morphine as an analgesic. In England currently less heroin is being used than in the past. To my mind, the compelling argument for those who favor the medical use of heroin is that some people on very large doses of narcotics needing injection of large volumes of fluid might be better served by injection of heroin in an equianalgesic dose in a lesser volume. In fact, there are available synthetic narcotics far more potent than

heroin that can be injected in a small volume of fluid.

I have no moral stand on the medical use of heroin, but we get sidetracked on nonissues. It is important to control pain. Pain can be adequately controlled without the use of heroin—but frequently it is not.

QUESTION: How, specifically, would you educate the house staff? How can misconceptions about pharmacology be corrected and how can prescription patterns be changed?

DR. STIMMEL: I will say that what does not seem to work is a lecture attended by 30 or 40 house staff members. What I have found most effective is addressing them individually when an actual problem exists. For example, when somebody has indeed erred in prescribing medication or when a resident is upset because a patient is becoming abusive—at that point residents are much more receptive to hearing about a better approach. It almost has to be on a one-to-three, one-to-four basis, explaining why they are doing something wrong.

As Dr. Millman said, I think that the approach is to agree with the residents that these people are not easy to manage and may well be manipulative. Nonetheless, a major problem is not being addressed. Education and reeducation is a tedious process and must be repetitive. This is not the most cost efficient way of doing things. I am firmly convinced, however, that it is the most effective. I have given lectures for more than a decade to house staff and students. Not only is there good attendance but there is adequate retention. Indeed, on rounds when a person is getting an inappropriate narcotic dose and I ask the resident to explain the pharmacologic actions of the narcotic, he does so. I then ask, "Why are you then giving it this way?" The answer is, "Well, I don't really think the pain is as severe as claimed."

DR. SAMUEL W. PERRY: We have all had the experience. You can educate one resident at a time and they will do it, but you will see them come back as first year, second year residents, you will see them as interns, and they will be doing the same thing again. In this instance I agree with Dr. Millman. There is something magical about these drugs. I do not know what it is. I speculated about it when I was talking this morning. Why is it the human being has receptors to some poppy seeds? It is an interesting idea. Why is it? Why are we wired that way?

DR. WILLIAM A. FROSCH: I wonder whether the difference in attitude in terms of the hopefulness of affecting house staff behavior is not related to area of specialization. I think that when a house staff member hears a psychiatrist say, "That is not the way to do it, the real way is thus and so," he is more easily dismissed than a professor of medicine might be. The

professor of medicine speaks, if you will, in the command mode and is more likely to have an impact, at least in that individual case.

DR. PERRY: I feel I have an impact in the individual case.

DR. STIMMEL: It is very difficult, almost impossible, to address this problem globally. Even well-informed physicians often prescribe narcotics inappropriately. When questioned, they admit it is inappropriate, yet they do it. This only involves narcotic drugs and is very impressive. As an example, an excellent physician I know was giving a patient pentazocine lactate and oxycodone HCl with acetaminophen (Talwin® and Percocet®). Why would anyone use this combination?

DR. PERRY: Why Talwin at all?

DR. STIMMEL: I agree. But if one wanted to use Talwin, why would one use Percocet? As soon as it was brought to his attention, he said, "You're right."

DR. ROBERT B. MILLMAN: What was he thinking?

DR. STIMMEL: There would be less of a dependency problem with coadministration of Talwin.

QUESTION: Where did we leave off with the heroin issue?

DR. STIMMEL: I disagreed with Dr. Millman. Personally, I have nothing against the medical use of heroin for terminal disorders, but I do not think that it is really needed.

DR. MILLMAN: The question I raised was whether, in some way we cannot measure, heroin differs qualitatively from the barbituates. As such, it would be more useful. I am not suggesting we introduce it or not. I am merely asking the question. I still think that it is not worth the trouble of a big issue.

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